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that there are in America no more useful citizens than foresters. I think there are no higher types of American citizenship than exemplified by great foresters. I see for the work, unless my vision is all wrong, a great and growing and a most productive future. Upon your zeal, upon your training, and upon your experience and that of other foresters, depends more than anything else the future of the forests of America. From the far-flung national forests, set among the great mountain ranges of the west, to the wood-lots and the timber tracts right here at home, lies your work. I hope that the future of the forests of America will be safe in the hands of American foresters.

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### SOME NEW AMERICAN LYTHRA.

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BY J. A. NIEUWLAND.

#### *Lythrum cordifolium* nov. sp.

Planta glabra gracilis cum ramulis tenuibus permultis et foliis parvis ovatis crassiusculis omnibus magnitudinis aequalis circa 6-8 mm. longis et 2.5-4 mm. latis strictissime oppositis, apice acutis vel obtusiusculis, basi latissime cordatis vel rotundatis sessilibus, marginibus subaspere strigulosis; floribus perpaucis ad ramulorum apices oppositis, axillaribus subsessilibus, cum duobus bracteis linearibus sub hypanthio striato, 5 mm. longo. Calix breviter denticulatus vel fere edentatus, et sum appendicibus inter sepala longis recurvatis subulatis. Florum aliae partes ignotae.

Plant very slender glabrous with long slender branches, and numerous very small ovate cordate thickish leaves, about uniform in size and shape throughout, about 6-8 mm. long, 2.5-4 mm. wide strictly opposite, acute or obtusish at the apex and broadly cordate to rounded sessile at the base. Margins roughish strigulose. Flowers few aggregated near the ends of the slender branches axillary, opposite, subsessile with two small linear bracts below the hypanthium, which is ridged and about 5 mm. long. Calyx teeth very short, almost obliterated; intersepalal appendages or processes long, recurved, subulate. Other flower parts unknown as the specimen was in bud from which the description was made.

The specimen is rather young; the flowers not yet fully

developed. The vegetable characters are, however, so striking as to warrant segregation on these marks alone. The type is in the herbarium of the United States Department of Agriculture, collected by S. B. Buckley somewhere in N. Carolina, Georgia, or Florida. "Distrib. by the Shaw School of Botany." No more details are given on the label.

By vegetative characters alone the plant deserves to be distinct from any other *Lythra* to which it may be referred. The leaves are as strictly opposite and decussate as in *L. lineare* Linn., and yet as evident from their description not at all like those of typical *L. alatum* Linn. The slender separate twigs have the long scarcely branched appearance of the plant called by some *L. flagellare*, but the cordate broad leaves distinguish it from this. The calyx and hypanthium are of a totally different kind. The mode of branching is decidedly divaricate opposite, and more leafy. The hypanthium differs too in being ridged or even creased.

The plant differs from *L. lineare* Linn. in the shape of the leaves which are broader and shorter, the branches are tetragonal or even winged, but the habit about the same.

From *L. gracile* Benthams, a Mexican plant, its nearest ally in appearance of habit and branching it differs by having broader oval leaves shorter than the internodes. Though the branches are long and gracilent the flowers have a different calyx, rather more like *L. alatum* with long reflexed appendages than calyx segments or teeth. These in *L. gracile* Benthams are subequal. The hypanthium, deeply ridged in *L. cordifolium*, is only slightly striate or terete in *L. gracile*. The latter, moreover, is suffruticose.

#### ***Lythrum dacotanum* nov. sp.**

Planta glabra caule et ramis subteretibus aliquantulum alatis, foliis lanceolatis, sessilibus vel basi rotundatis vel subcordatis, acutis vel acuminatis, marginibus scabris, 2.5-4.5 cm. longis subtus pallescentibus facie superiore viridibus: foliis inflorescentiae permultis divaricatis vel reflexis, tenuioribus sibi propinque aggregatis, 1.5 cm. longis vel longioribus, flores axillares excedentibus: ramis paucis virgatis, elongatis. Flores magni circa 1 cm. longi, staminibus 6, longe exsertis, stylo incluso vel haud exserto etiam fructu facto; antheris suborbicularibus subnigris; ovario circa 2 mm. longo: stylo et stigmate circa 3 mm. et calice circa 6 mm. longo, subsessili, cum duabus bracteis

parvulis ad basim; petalis obovatis circa 5 mm. longis 3.5 mm. latis. Calyx triangulo-dentatus appendicibus longis, subulatis, reflexis, calicis dentes 3-plo excedentibus.

Plants glabrous with roundish stems which are slightly winged; leaves 2.5-4.5 cm. long, lanceolate acute or acuminate, sessile rounded or subcordate at the base, scabrous margined, rather thin, pale below and dark green on the surface. Leaves of the inflorescence very numerous large widely spreading or reflexed, closely aggregated 1.5 cm. or more long exceeding the axillary flowers. Branches several long wand-like. Flowers rather large about 1 cm. in length or slightly more. Stamens 6 long exserted, style included or barely exserted even in fruit. Ovary about 2 mm. long; style and stigma nearly 3 mm. long, calyx nearly 6 mm. long, hypanthium subsessile with two minute bracts near the base. Petals obovate nearly 5 cm. long, 3.5 broad, calyx teeth, broad triangular, processes long subulate spreading or reflexed about three times as long as the calyx teeth.

Type No. 240979 of the U. S. National Museum from South Dakota, collected near Sioux Falls in August 1892 by J. J. Thorner. Another specimen is numbered 516395, otherwise alike; both from the herbarium of Thomas A. Williams. So different does the plant appear from its nearest ally *L. alatum* Linn. in habit as to seem at first sight more like *L. Vulneraria* Linn. with which, however, it has no nearer relationship though intermediate perhaps.

***Lythrum parvulum* nov. sp.**

Planta simplex vel minus ramosa circa 3 dm. alta vel minor e radice crasso plus minusve erecto ligneo, rhizomata lignosa emittens, caulibus pluribus 4-angulatis cum alis decurrentibus e basi foliorum stricte sessilium; foliis pallescentibus utraque facie, vel glaucis 5x9 mm. usque 7x18 mm. latis et longis ovalibus vel oblongo-linearibus, abrupte acutis vel obtusiusculis, basi stricte sessilibus, cordatis vel rotundatis vel infimis aliquando subcuneatis et obovatis, et in superioribus caulibus praecipue perparvas stipulas in fine alarum habentibus, foliis in inflorescentia linearibus minoribus, margine striguloso, plerumque basi cordatis vel rotundatis. Flores circa 1 cm. lati petalis obovatis colore earum *L. alati*, mucronatis calice circa 6 mm. longi cujus dentes breves obtusi membranosi, cum appendicibus brevibus, divaricatis, triangulatis, hypanthio cylindrico sub dentibus calicis angustato:

staminibus exsertis inaequalibus; stylo circa 7 mm. exserto: ovario subcylindrico circa 4 mm. longo.

Plant not much branched about 3 dm. high or smaller from a rather thick more or less upright woody root sending from the base of the stem rather thick woody rootstocks. Stems several to many and with the branches 4-angled and wings running down from each side of the insertion of the strictly sessile leaves. Foliage and especially the stems very pale. Leaves somewhat glaucous oval to oblong linear or linear abruptly acute or obtusish; base strictly sessile cordate to rounded, some of those on the lower part of the plant at times somewhat cuneate and obovate, and even higher on the stem with noticeable cuspidate stipular terminations of the wings of the stem at the leaf insertion. Leaves, thick about 5x9 mm. to 7x18 mm., the floral ones smaller mostly alternate and with cordate or rounded base and rough margins, the midrib of all very pale. Flowers about 1 cm. wide; petals obovate of the same color as those of *L. alatum* mucronate tipped; calyx about 6 mm. long its teeth obtuse somewhat membranous; appendages short triangular somewhat spreading calyx tube cylindrical apparently narrowed below the teeth: stamens exerted unequal. Style with hemispherical stigma exerted about 7 mm. Ovary subcylindric extending about 2-3 the height of the hypanthium. Flowers short-stalked with two minute oval pointed bractlets at the base of the hypanthium.

As type may be selected No. 442510 of the U. S. National Herbarium, i. e. S. M. Tracey's 8071 from Abilene, Texas, collected May 24, 1902. The plant is labeled *L. ovalifolium* but it differs from this with which it was long confounded by winged stem and cordate leaves absent in typical specimens of Gray's plant. No. 265839 of the U. S. National Herbarium collected at Ulysses, Kansas, by C. H. Thompson (his no. 34) may be referred here. The plant is marked *L. alatum* which it in no way resembles. No. 10 of G. C. Nealy collected June, 1892, at Corpus Christi, Texas, is another good example, but a rather small form scarcely branched at all except the upright branches from the creeping or prostrate stems or rhizomes.

***Lythrum flagellare*** Shuttleworth ms.<sup>1</sup> also Koehne, Engler's

<sup>1</sup> The name *L. flagellare* Shuttleworth, at least in as far as it is different from *L. ovalifolium* Engelm., was either never published or is a *nomen nudum*. When first used in print as above noted by Koehne it was used as a synonym

Bot. Jahrb. I., p. 321, (1881) as a synonym of *L. ovalifolium* Engelm.

Planta perennis erecta vel ascendens caulibus pertenuibus a rhizomate repente tenui, lignoso, assurgens 1-3 dm. alta, foliis crassis, rigidis, glaucis, ovatis ovalibus vel obovatis, *distincte sed breviter petiolatis*, cauli subtereti sine alis, simplici vel subsimplici (aliquando minus ramoso); foliis cum margine striguloso, basi rotundatis vel subcordatis, omnibus fere aequali magnitudine, divaricatis vel erectiusculis 5-13 mm. longis 3-6 mm. latis. Flores calice subcylindrico vel cylindrico-campanulato, subsessili minute ad basim bibracteato, pedunculo fructifero 1 mm. longo, dentibus calicis apice rotundatis mucronatis; appendicibus erectis vel divaricatis, lanceolatis, subulatis, dentes calicis duplo excedentibus: Flores quoque pauci axillares tantum 2-10, binis oppositis, in unoquoque cauli vel ramo elongato; petalis purpureis vel pallidis oblongis; staminibus subaequalibus exserta usque 2 mm., et in aliis plantis cum stylo aequemodo exserto et staminibus inclusis. Petioli, calix, et nodi purpurei sunt.

Plant, erect or ascending, perennial very slender 1-3 dm. high from slender woody repent rootstocks or runners. Stem subterete usually simple or but little branched purplish with scarcely any trace of wings or angles and only a minutely raised white line descending from both sides of the leaf insertions. Leaves thick rigid, roughish margined, ovate, oval, or sometimes obovate distinctly though short-petioled, rounded or subcordate at the base and obtuse at the apex, all on the same shoot nearly equal in size, spreading or slightly erect. 5-13 mm. long and 3-6 mm. wide. Calyx subcylindric gradually widened upward nearly sessile with two linear membranous bracts at the base, pedicel about 1 mm. long in fruit, bibracteolate at the middle. Calyx segments rounded mucronate appendages, lanceolate subulate twice as long. Petals pale purplish, oblong two-thirds as long as

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to the plant of Engelman. The plant to which Shuttleworth applied the name in MS. is, however, quite a different plant from *L. ovalifolium*. Owing to this peculiar condition of things there may arise doubt as to the use of the name *L. flagellare* for Shuttleworth's plant, when its first use was that of a synonym for *L. ovalifolium*. We prefer to keep Shuttleworth's inedited name at the same time establish the identity of the plants.

Should nomenclatorial quibblers consider *L. flagellare* inapplicable we suggest as a second choice *L. tenue* for the plant here for the first time described, as far as we know.

the calyx tube and rather narrow. Leaves glaucous, the petioles calyx and nodes of the stem purple glaucescent. Flowers few solitary in opposite axils in 1-5 pairs only. The stems then produce several flowerless nodes and branches above, the branches again producing few opposite solitary on their upper ends. Stamens subequal exserted about 2 mm. in short-styled plants, the styles equally exserted in plants with included stamens.

Plant readily distinguished from *L. ovalifolium* by its habit and woody stems, *L. ovalifolium* is an herb with the habit of *L. alatum*. Its leaves are different in shape the lower obovate or even suborbicular and all *thin and membranous*, the stems winged. *L. flagellare* somewhat shrubby at least below blooms with only a few flowers on the stems which soon elongate and branch. *L. ovalifolium* though at first simple later branches diffusely and blooms successively and indefinitely becoming about 3 dm. high. The calyx is shorter and comparatively wider. The shape and texture of the leaves distinguishes it at a glance from *L. parvulum*, though the habit of the two is more nearly similar.

Good examples of *L. flagellare* in the U. S. Herbarium are numbers 442240, S. M. Tacy's 7594 labelled *L. flagellare* Shuttlew. Brandentown, Fla., July 20, 1901. Also two other specimens from Florida collected in 1890 by J. H. Simpson in the Herbarium of the U. S. Dept. of Agriculture; also A. P. Garber's No. 21, labelled *L. Hyssopifolia* L. Sarasota June, 1878 (No. 249775 also in the same herbarium).

These two have been hitherto confounded under *L. ovalifolium*<sup>2</sup> Engelm, a very different plant from different region. Lindheimer's plant No. 609 "Fl Texana exsiccata" is typical *L. ovalifolium* as described by Gray as *L. alatum* var. *ovalifolium* in "Plantae Lindheimerianae." Another such typical specimen is A. A. Heller's collected in Texas, Kerrville; 1885 U. S. Herbarium No. 214035. No. 502167 U. S. Herbarium collected by Lindheimer in 1809 at Commanche Spring, New Braunfels, Tex. These two were carefully examined and compared with the original descriptions of publication and found to differ totally in material respects from *L. parvulum* as also from *L. flagellare*.

Department of Botany,  
*Univ. of Notre Dame, Ind.*

<sup>2</sup> Engelm in A. Gray, Boston Jr. Nat. Hist. VI., p. 187, (1850).

<sup>3</sup> p. 187. Walpers Ann., 2, p. 539.